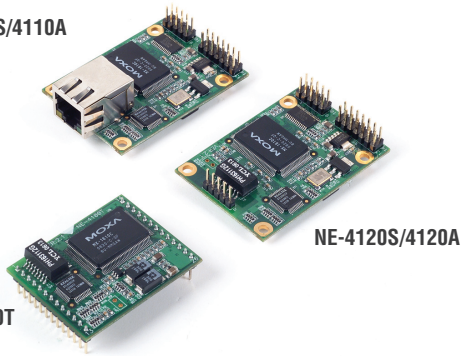
# NE-4100 Series

## *10/100 Mbps embedded serial device servers*

NE-4110S/4110A



NE-4120S/4120A

NE-4100T

- 10/100 Mbps Ethernet interface
- Up to 230.4 Kbps baudrate support
- Choice of operation modes: Real COM, TCP Server, TCP Client, and UDP
- DHCP, BootP, Static IP, and ARP supported
- SNMP and e-mail alerts for event trapping and notification
- Half the size of a credit card—only 57 × 40 mm
- Low power consumption at 1.5W, with single +5V input

## Overview

Moxa's NE-4100 embedded device servers are designed for manufacturers who want to add sophisticated network connectivity to their serial devices. Moxa's embedded device servers can be used to convert any device with a standard serial interface to an Ethernet-enabled device in no time. The NE-4100 embedded device servers support 10/100 Mbps Ethernet, and provide ready-to-use operation modes, including TCP Server, TCP Client, and UDP. In addition, a Real COM driver is included for backward compatibility with legacy software.

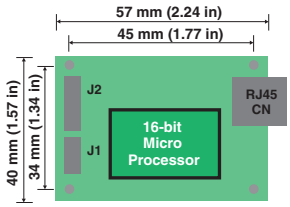
## SNMP and E-mail Alerts for Event Trap and Notification

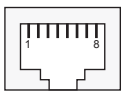
NE-4100 embedded device servers can be configured to send an SNMP trap or e-mail under the following conditions:

- Cold/warm start
- Password authentication failure
- Change in DSR/DCD line signal
- Change in IP address
- Change in password

## Dimensions and Pin Assignment

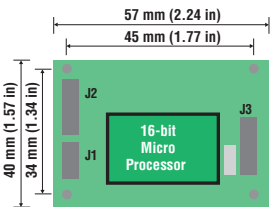
### NE-4110S/4110A




| PIN | Signals |
|---|---|
| 1 | Tx+ |
| 2 | Tx- |
| 3 | Rx+ |
| 6 | Rx- |

### NE-4120S/4120A




**J3**
Ethernet Pin-header

| | |
|---|---|
| 1 | Tx+ |
| 2 | Tx- |
| 3 | |
| 4 | Rx+ |
| 5 | Rx- |

### NE-4110/4120 Series

**J2**

| | | | |
|---|---|---|---|
| GND | 14 | 13 | VCC(+5V) |
| GND | 12 | 11 | VCC(+5V) |
| DIO0 | 10 | 9 | 10M_LED |
| DIO1 | 8 | 7 | 100M_LED |
| DIO2 | 6 | 5 | Ready_LED |
| DIO3 | 4 | 3 | Reset |
| TxD1 | 2 | 1 | RxD1 |

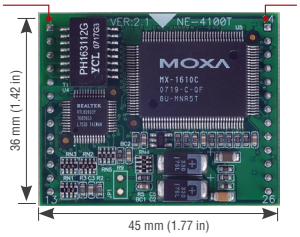
### NE-4110S/4120S

**J1**

| | | | |
|---|---|---|---|
| NC | 10 | 9 | NC |
| CTS0 | 8 | 7 | RTS0 |
| DSR0 | 6 | 5 | GND |
| DTR0 | 4 | 3 | TxD0 |
| RxD0 | 2 | 1 | DCD0 |

### NE-4110T

| Pin No. | Signal |
|---|---|
| 1 | ETx+ |
| 2 | ETx- |
| 3 | ERx+ |
| 4 | ERx- |
| 5 | LED 10M |
| 6 | TxD0 |
| 7 | RxD0 |
| 8 | RTS0 |
| 9 | CTS0 |
| 10 | Reset |
| 11 | GND |
| 12 | GND |
| 13 | TxD1 |




| Pin No. | Signal |
|---|---|
| 14 | PIO0 |
| 15 | PIO1 |
| 16 | PIO2 |
| 17 | PIO3 |
| 18 | LED 100M |
| 19 | DCD0 |
| 20 | DSR0 |
| 21 | DTR0 |
| 22 | GND |
| 23 | Ready LED |
| 24 | +5V |
| 25 | +5V |
| 26 | RxD1 |

(45 × 36 mm, 26-pin DIL package, 2.54 mm pitch)

### NE-4110A/4120A

**J1**

| | | | |
|---|---|---|---|
| NC | 10 | 9 | NC |
| NC | 8 | 7 | NC |
| NC | 6 | 5 | GND |
| RxD- (Data-) | 4 | 3 | RxD+ (Data+) |
| TxD+ | 2 | 1 | TxD- |

For 2-wire RS-485 mode, Pin 3 is Data+, Pin 4 is Data-

## Specifications

### Form Factor
**Type:**
NE-4110/4120: Ready-to-go stand-alone modules
NE-4100T: 26-pin dual-in-line package
**Dimensions:**
NE-4110/4120: 57 × 40 mm (2.24 x 1.57 in)
NE-4100T: 45 × 36 mm (1.77 x 1.42 in)
**Weight:**
NE-4110S/4110A: 40 g
NE-4120S/4120A/4100T: 20 g

### Ethernet Interface
**Number of Ports:** 1
**Speed:** 10/100 Mbps, auto MDI/MDIX
**Connector:**
NE-4110 Series: RJ45
NE-4120 Series: 5-pin pin header
NE-4100T: 26-pin dual-in-line
**Magnetic Isolation Protection:** 1.5 KV built-in

### Serial Interface
**Number of Ports:** 2
**Serial Standards:**
• Port 1:
NE-4110S/4120S: RS-232
NE-4110A/4120A: RS-422, RS-485-4w, RS-485-2w
NE-4100T: TTL
• Port 2:
TTL console port
**RS-485 Data Direction Control:** ADDC® (automatic data direction control)

### Serial Communication Parameters
**Data Bits:** 5, 6, 7, 8
**Stop Bits:** 1, 1.5, 2
**Parity:** None, Even, Odd, Space, Mark
**Flow Control:** DSR/DTR and RTS/CTS (RS-232 only), XON/XOFF
**Baudrate:** 110 bps to 230.4 Kbps

### Serial Signals
**TTL:**
• Port 1: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
• Port 2: TxD, RxD, GND
**RS-232:** TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
**RS-422:** Tx+, Tx-, Rx+, Rx-, GND
**RS-485-4w:** Tx+, Tx-, Rx+, Rx-, GND
**RS-485-2w:** Data+, Data-, GND

### Digital I/O Pins
**GPIO:** 4 programmable I/O pins

### Software
**Network Protocols:** ICMP, ARP, IP, TCP, UDP, DHCP, Telnet, HTTP, SNMP V1/V2c, SMTP
**Configuration Options:** Web Console, Serial Console, Telnet Console, Windows Utility
**Windows Real COM Drivers:** Windows 95/98/ME/NT/ 2000, Windows XP/2003/Vista/2008/7 x86/64, Embedded CE 5.0/6.0, XP Embedded
**Fixed TTY Drivers:** SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i
**Linux Real TTY Drivers:** Linux kernel 2.4.x, 2.6.x
**Operation Modes:** Real COM, TCP Server, TCP Client, UDP

### Environmental Limits
**Operating Temperature:**
Standard Models: 0 to 55°C (32 to 131°F)
Wide Temp. Models: -40 to 75°C (-40 to 167°F)
**Operating Humidity:** 5 to 95% RH
**Storage Temperature:** -40 to 75°C (-40 to 167°F)

### Power Requirements
**Input Voltage:** 5 VDC (±5%)
**Power Consumption:** 290 mA @ 5 VDC max.

### Regulatory Approvals
**EMC:** CE EN55022 Class A, FCC Part 15 Subpart B Class A

### Reliability
**Automatic Reboot Trigger:** Built-in WDT (watchdog timer)
**MTBF (meantime between failures):**
NE-4100T: 288173 hrs
NE-4110A: 289573 hrs
NE-4110S: 290276 hrs
NE-4120A: 289573 hrs
NE-4120S: 285874 hrs

### Warranty
**Warranty Period:** 5 years
**Details:** See www.moxa.com/warranty

## Ordering Information

### Available Modules
**NE-4110S:** Device server module for RS-232 devices, supports 10/100BaseT(x) with RJ45 connector
**NE-4110A:** Device server module for RS-422/485 devices, supports 10/100BaseT(x) with RJ45 connector
**NE-4120S:** Device server module for RS-232 devices, supports 10/100BaseT(x) with 5-pin Ethernet pin header
**NE-4120A:** Device server module for RS-422/485 devices, supports 10/100BaseT(x) with 5-pin Ethernet pin header
**NE-4100T:** Device server module for TTL devices, supports 10/100BaseT(x) with DIL package

### Available Starter Kits
**NE-4110-ST:** Starter kit for the NE-4110S and NE-4110A (module not included)
**NE-4120-ST:** Starter kit for the NE-4120S and NE-4120A (module not included)
**NE-4100-ST:** Starter kit for the NE-4100T (module not included)
Note: Starter kits do not include the NE-4100 module. Please order modules and evaluation kits separately.

### Package Checklist (modules)
- NE-4100 series module

### Package Checklist (starter kits)
- NE-4100 or NE-4110 or NE-4120 evaluation board
- Universal power adaptor
- 2 power cords
- Null modem cable
- Cross-over Ethernet cable
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card


© Moxa Inc. All Rights Reserved. Updated Mar. 17, 2010. Specifications subject to change without notice. Please visit our website for the most up-to-date product information.